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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,847	08/25/2006	Kyuhei Kitao	3273-0227PUS1	3804
2292 7590 08/07/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER ARNBERG, MEGAN C				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
08/07/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/590,847

Applicant(s)

KITAO ET AL.

Examiner

MEGAN ARNBERG

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 7-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 10 contains parenthesis which make it unclear if the words within the parenthesis is part of the claim or an aside to the claim. Appropriate correction is required.

Claims 4 and 10 further limits the color hue to the acronym "APHA", but does not define what this stands for. Appropriate correction is required.

Claim 7 contains the acronym "WFE" in the third line from the bottom of page 5. It is unclear what is meant by this acronym. For the purpose of further examination, it is considered to mean a wiped film evaporator.

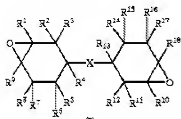
Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-6 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takai (US 2003/0059618) in view of Boehme et al. (U.S. Pat. 4,849,532).

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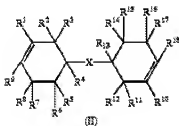
Regarding claims 1, 2, 3, 5: Takai '618 teaches a compound of the formula:



wherein X represents a divalent group selected from

oxygen atom, a sulfur atom, $-\text{SO}-$, $-\text{SO}_2-$, $-\text{CH}_2-$, $-\text{C}(\text{CH}_3)_2-$, $-\text{CBr}_2-$, $-\text{C}(\text{CBr}_3)_2-$, and $\text{C}(\text{CF}_3)_2-$; R^1 to R^{18} each may be the same or different from each other and are a hydrogen atom, a halogen atom, a hydrocarbon group that may contain an oxygen atom or halogen atom, or an alkoxy group that may have substituent groups (para. 23 and 24).

Takai '618 teaches a process of producing a compounds in which an olefin of the



structure:

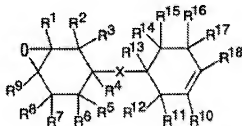
(para. 23) is epoxidized with aliphatic

percarboxylic acid (para. 24) having substantially no water (para. 26), followed by removing the solvent by distillation (para. 58). Takai '618 teaches epoxidizing the instant formula (II) with a percarboxylic acid having substantially no water (paras. 23-26).

Not disclosed is then purifying by distillation. However, Boehme et al. teaches preparing cycloaliphatic diepoxides from the corresponding diolefin with a percarboxylic acid in solvent (col. 1 lines 1-25), and then performing distillation (col. 4 lines 5-27).

Takai '618 and Boehme et al. are analogous art because they are both concerned with the same field of endeavor, namely preparing cycloaliphatic diepoxides from the corresponding diolefin with a percarboxylic acid in solvent. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine Takai '618 and Boehme et al. and would have been motivated to do so because distillation is a well known method of purification and removes volatile components, as evidenced by Boehme et al. (col. 4 lines 15-23).

While Takai '618 does not state that the high molecular weight components with elution time shorter than the above compound or 5.5% or less, the impurities with a shorter retention time than the above compound are 19.5 % or less, and the reactive



intermediate of the compounds of the formula:

are

4.5% or less, since Takai '618 and Boehme et al. teach the process to make the compound according to the process disclosed in the instant written description, it is implicit that the composition would have these properties. As further evidence that this is the case, disclosed is that the purity is 93.4% (Takai para. 189), which indicates that all three of these added together can be no more than 6.6%. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the Office's position that the application contains

inadequate disclosure that there is not teaching as to how to obtain a composition with these properties.

Regarding claim 4: While Takai '618 does not directly teach that the color hue is 60 or less, since all of the components are present in the composition it is inherent that the composition would have this property. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain a composition with this property.

Regarding claim 6: Takai '618 teaches epoxidation followed by removal of solvent by distillation (paras. 23-27 and 58)

Regarding claim 16: Takai '618 teaches a curing agent (para. 73).

Regarding claim 17: Takai '618 teaches curing the composition (para. 61)

Regarding claim 18: Takai '618 teaches the cured product is transparent (para. 61)

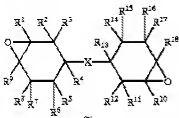
Regarding claim 19: Takai '618 teaches an adhesive (abstract).

Regarding claim 20: Takai '618 teaches a coated film (para. 3).

Claims 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takai (US 2003/0059618) in view of Boehme et al. (U.S. Pat. 4,849,532) when taken with Thiele (U.S. Pat. 4,344,872).

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Regarding claims 7, 8, 9, 14: Takai '618 teaches a process of producing a

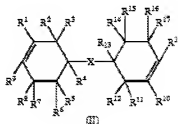


compound of

wherein X represents a divalent group

selected from oxygen atom, a sulfur atom, $-\text{SO}-$, $-\text{SO}_2-$, $-\text{CH}_2-$, $-\text{C}(\text{CH}_3)_2-$, $-\text{CBr}_2-$, $-\text{C}(\text{CBr}_3)_2-$, and $-\text{C}(\text{CF}_3)_2-$; R^1 to R^{18} each may be the same or different from each other

and are a hydrogen atom, a halogen atom, a hydrocarbon group that may contain an oxygen atom or halogen atom, or an alkoxy group that may have substituent groups



(para. 23 and 24), in which an olefin of the structure:

(para.

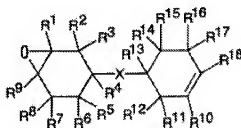
23) is epoxidized with aliphatic percarboxylic acid (para. 24) having substantially no water (para. 26), followed by removing the solvent by distillation (para. 58).

Not disclosed is then purifying by distillation. However, Boehme et al. teaches preparing cycloaliphatic diepoxides from the corresponding diolefin with a percarboxylic acid in solvent (col. 1 lines 1-25), and then performing distillation (col. 4 lines 5-27) with a Sambay evaporator (col. 5 lines 24-26), which is a wiped film/blade evaporator, as evidenced by Thiele (col. 2 lines 60-65). The distillation takes place at 10-300 mbar, which is 7.5-225 torr and 50-150 °C (col. 4 lines 60-65), which overlap the claimed ranges. Takai '618 and Boehme et al. are analogous art because they are both

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concerned with the same field of endeavor, namely preparing cycloaliphatic diepoxides from the corresponding diolefin with a percarboxylic acid in solvent. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine Takai '618 and Boehme et al. and would have been motivated to do so because distillation is a well known method of purification and removes volatile components, as evidenced by Boehme et al. (col. 4 lines 15-23).

While Takai '618 does not state that the high molecular weight components with elution time shorter than the above compound or 5.5% or less, the impurities with a shorter retention time than the above compound are 19.5 % or less, and the reactive



intermediate of the compounds of the formula:

are

4.5% or less, since Takai '618 and Boehme et al. teach the process claimed, it is implicit that the composition would have these properties. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is not teaching as to how to obtain a composition with these properties.

Regarding claim 10: While Takai '618 does not directly teach that the color hue is 60 or less, since all of the components are present in the composition it is inherent that the composition would have this property. If it is applicants' position that this would

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not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain a composition with this property.

Regarding claim 11: Takai '618 teaches the aliphatic percarboxylic acid is obtained by the oxidation of the corresponding aldehyde (para. 25).

Regarding claim 12: Takai '618 teaches the water content of the aliphatic percarboxylic acid is 0.8% by weight or less (para. 26).

Regarding claim 13: Takai '618 teaches peracetic acid (para. 27).

Regarding claim 15: Takai '618 teaches ethyl acetate (para. 55).

Double Patenting

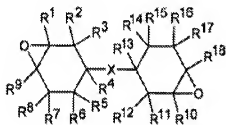
The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-5 of copending Application No. 11/792,782. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the instant application claims

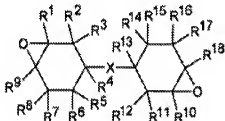


wherein X is a divalent group selected from the group consisting of an oxygen atom, a sulfur atom, $-\text{SO}-$, $-\text{SO}_2-$, $-\text{CH}_2-$, $-\text{C}(\text{CH}_3)_2-$, $-\text{CBr}_2-$, $-(\text{CBr}_3)_2-$, and $-\text{C}(\text{CF}_3)_2-$; R^1 to R^{18} each may be identical or different from each other and are a hydrogen atom, a halogen atom, a hydrocarbon group that may contain an oxygen atom or halogen atom, or an alkoxy group that may have a substituent, as does claim 1 of the copending application. Claim 1 of the instant application further claims the concentration of high-molecular-weight components having an elution time shorter than that of the alicyclic epoxy compound represented by the general formula (I) in detection by a gel permeation chromatography (hereinafter, GPC) is 5.5% or less with respect to the sum total of all of detected peak areas in terms of the peak area ratio per elution time, as does claim 3 of the copending application. Claim 2 of the instant application

claims the same limitations as claim 4 of the copending application, and claim 3 of the instant application claims the same limitations as claim 5 of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 5 of copending Application No. 10/883,162. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the instant application claims



wherein X is a divalent group selected from the group consisting of an oxygen atom, a sulfur atom, -SO-, -SO₂-, -CH₂-, -C(CH₃)₂-, -CBr₂-, -(CBr₃)₂, and -C(CF₃)₂-; R¹ to R¹⁸ each may be identical or different from each other and are a hydrogen atom, a halogen atom, a hydrocarbon group that may contain an oxygen atom or halogen atom, or an alkoxy group that may have a substituent, as does claim 5 of the copending application. While the amount of impurities claimed in claims 1-3 of the instant application are not directly taught in claim 5 of the copending application, disclosed is 100% of the compound. Therefore there would be 0% of the impurities, which reads on the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

Applicant's arguments filed April 29, 2008 have been fully considered but they are not persuasive, because:

A) Applicant's argument that there is no motivation to combine the distillation step of Boehme et al. with the method of Takai '618 is not persuasive. Distillation is a common and well known method used to achieve a more pure substance as stated above. Further, Boehme et al. discloses that volatile compounds are removed by distillation (col. 4 lines 18-23). The method of Takai '618 uses volatile solvents.

B) Applicant's argument that Takai '618 and Boehme et al. are not analogous art is not persuasive. Both references are concerned with the same field of endeavor, namely preparing cycloaliphatic diepoxides from the corresponding diolefin with a percarboxylic acid in solvent. The different linking group in each reference would not lead a person having ordinary skill in the art away from combining the teachings of the references since it is disclosed in both references that the reaction occurs at the double bonds and there is no interference during the reaction with the rest of the molecule, including the linking group. Further, applicant's argument that Boehme et al. uses perpropionic acid as an epoxidation agent is not germane since this is a specie in the claimed class of aliphatic percarboxylic acids.

C) Applicant's argument that the WFE distillation is not disclosed is not persuasive as Boehme et al. teaches a Sambay evaporator, which is a wiping film/blade evaporator as set forth above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEGAN ARNBERG whose telephone number is (571)270-3292. The examiner can normally be reached on Monday - Friday 7:30-5:00 EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./
Supervisory Patent Examiner, Art Unit 1796
2-Aug-08

/M. A./
Examiner, Art Unit 1796